Claims

[c1] 1. A method of processing a thermal element group to create a printed image, the method comprising:

providing printing parameters for a supply;

determining a dot history pattern and a number of thermal elements for the thermal element group;

assigning thermal elements to the thermal element group based on the number of thermal elements determined for the thermal element group;

generating a packed table, the packed table comprising values based on the printing parameters, the dot history pattern, the number of thermal elements for the thermal element group, and the thermal elements assigned to the thermal element group;

wherein the printed image is created using a bit map pattern, a packed dot history pattern, the packed table, and the printing parameters, each of which has been stored in printer memory.

[c2] 2. The method of Claim 1, wherein the printing parameters comprise a microstrobe number and microstrobe energy values.

[c3] 3. The method of Claim 1, wherein a memory cell associated with the supply provides the printing parameters.

[c4] 4. The method of Claim 1, wherein the packed dot history pattern comprises at least one site associated with a thermal element adjacent to a selected thermal element.

[c5] 5. The method of Claim 1, wherein the packed dot history pattern comprises at least one site based on a prior generation of a selected thermal element.

[c6] 6. The method of Claim 1, wherein the packed dot history pattern comprises at least one site based on a prior generation of a thermal element adjacent to a selected thermal element.

[c7] 7. The method of Claim 1, wherein the bit map pattern comprises values of bit map pattern data, the bit map pattern data comprising a plurality of ones and zeros.

[c8]   8.The method of Claim 7, wherein the ones and zeros represent an instruction to generate a dot or not generate a dot.

[c9]   9.The method of Claim 1, wherein the packed table comprises a packed index, a packed index length, packed index values, divided microstrobes, packed binary pulse numbers, and packed strobe numbers.

[c10]   10.The method of Claim 1, wherein the packed table is based on a number of possible energy value combinations and a packed thermal element number.

[c11]   11.The method of Claim 1, wherein generation of the packed table comprises inserting the selected number of thermal elements into the selected dot history pattern.

[c12]   12.The method of Claim 1, wherein the thermal element group comprises at least one of consecutive thermal elements, sequential thermal elements, and adjacent thermal elements.

[c13]   13.A method of processing a thermal element group to create a printed image, the method comprising:

accessing, from a specific supply, printing parameters comprising a microstrobe number and microstrobe energy values and storing the microstrobe number and microstrobe energy values in a printer memory;

determining a dot history pattern;

determining a number of thermal elements for the thermal element group;

assigning thermal elements to the thermal element group based on the number of thermal elements determined for the thermal element group;

packing the thermal element group into the dot history pattern to generate a packed dot history pattern;

determining a packed thermal element number based on the packed dot history pattern;

creating a packed index having a packed index length, the packed index length based on the packed thermal element number, and determining packed index values to occupy the packed index length, the packed index values based on the packed dot history pattern;

dividing microstrobes, the microstrobes based on the microstrobe number stored in the printer memory, such that divided microstrobes are produced; assigning packed binary pulse numbers to the divided microstrobes based on a strobe pattern, the packed binary pulse numbers corresponding to each of the packed index values occupying the packed index length;

determining packed strobe numbers based on the packed binary pulse numbers, the packed strobe numbers corresponding to each of the packed index values occupying the packed index length;

wherein the printed image is created by using a bit map pattern, the packed dot history pattern, the packed index values, the packed strobe numbers, and the microstrobe energy values.

[c14]   14. The method of Claim 13, wherein one or more of the bit map pattern, the packed dot history pattern, the packed index values, and the packed strobe numbers has been stored in printer memory.

[c15]   15. The method of Claim 13, wherein accessing the printing parameters is accomplished by loading a cartridge containing a supply of ribbon into a printer.

[c16]   16. The method of Claim 15, wherein the cartridge comprises a memory cell secured to the cartridge, the memory cell having the printing parameters stored therein.

[c17]   17. The method of Claim 16, wherein the memory cell is erased after the supply of ribbon stored within the cartridge is exhausted.

[c18]   18. The method of Claim 16, wherein the memory cell contains an electronic lock capable of being unlocked by an electronic key associated with the printer.

[c19]   19. The method of Claim 18, wherein the electronic key is accessed by the printer and used to unlock the supply specific printing parameters stored in the memory cell.

[c20]

20. The method of Claim 16, wherein the memory cell comprises a memory selected from one of a group consisting of a solid-state memory device, a RAM,

a non-volatile RAM, an EEPROM, and a flash memory.

[c21]   21.The method of Claim 16, wherein the supply cartridge is ergonomically designed to compliment a hand of a printer operator.

[c22]   22.The method of Claim 13, wherein the thermal elements assigned to the group of thermal elements comprise consecutive thermal elements.

[c23]

23.A method of processing a thermal element group to create a printed image, the method comprising:

accessing, from a specific supply, printing parameters comprising a microstrobe number and microstrobe energy values and storing the microstrobe number and microstrobe energy values in a printer memory;

determining a dot history pattern;

determining a number of thermal elements for the thermal element group;

assigning thermal elements to the thermal element group based on the number of thermal elements determined for the thermal element group;

packing the thermal element group into the dot history pattern to generate a packed dot history pattern;
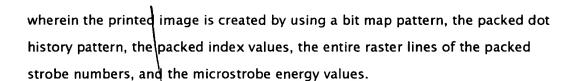
determining a packed thermal element number based on the packed dot history pattern;

creating a packed index having a packed index length, the packed index length based on the packed thermal element number, and determining packed index values to occupy the packed index length, the packed index values based on the packed dot history pattern;

dividing microstrobes, the microstrobes based on the microstrobe number stored in the printer memory, such that divided microstrobes are produced;

assigning packed binary pulse numbers to the divided microstrobes based on a strobe pattern, the packed binary pulse numbers corresponding to each of the packed index values occupying the packed index length;

determining packed strobe numbers based on the packed binary pulse numbers, the packed strobe numbers corresponding to each of the packed index values occupying the packed index length, until an entire raster line of packed strobe numbers is ascertained;

wherein the printed image is created by using a bit map pattern, the packed dot history pattern, the packed index values, the entire raster lines of the packed strobe numbers, and the microstrobe energy values.

[c24]   24. The method of Claim 23, wherein one or more of the bit map pattern, the packed dot history pattern, the packed index values, and the entire raster lines of the packed strobe numbers has been stored in printer memory.

[c25]   25. The method of Claim 23, wherein the printed image is created after two or more of the entire raster lines have been printed.

[c26]   26. The method of Claim 23, wherein the method further comprises using a component to aid in processing, the component selected from a group consisting of a keyboard, a mouse, an operator, a liquid crystal display, and a monitor.

[c27]   27. The method of Claim 23, wherein the bit map pattern comprises values of bit map pattern data.

[c28]   28. The method of Claim 27, wherein the values of bit map pattern data comprise a plurality of ones and zeros.

[c29]   29. The method of Claim 28, wherein each of the ones and zeros represent an instruction to generate a dot or not generate a dot.